What is claimed is:

1. An optical filter comprising:

a mirror including a plurality of first dielectric layers having a first index of refraction and a plurality of second dielectric layers having a second index of refraction,

wherein a plurality of said first dielectric layers have an integer quarter wave optical thickness and at least one of said first dielectric layers has a non-integer quarter wave optical thickness, and

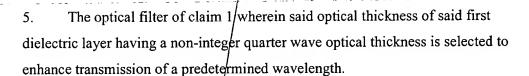
wherein a plurality of said second dielectric layers have an integer quarter wave optical thickness and at least one of said second dielectric layers has a non-integer quarter wave optical thickness.

- 2. The optical filter of claim 1 wherein said first dielectric layer having a non-integer quarter wave optical thickness has a physical thickness different than a physical thickness of said first dielectric layers having an integer quarter wave optical thickness.
- 3. The optical filter of claim 1 wherein said second dielectric layer having a non-integer quarter wave optical thickness has a physical thickness different than a physical thickness of said second dielectric layers having an integer quarter wave optical thickness.
- 4. The optical filter of claim 1 further comprising:

a second mirror including a plurality of first dielectric layers having said first index of refraction and a plurality of second dielectric layers having said second index of refraction; and,

a spacer positioned between said mirror and said second mirror.

5



- 6. The optical filter of claim 5 wherein said optical thickness of said first dielectric layer having a non-integer quarter wave optical thickness is selected to maintain a predefined reflectivity for said mirror.
- 7. The optical filter of claim 5 wherein said predetermined wavelength corresponds to a service channel in an optical communications system.
- 8. The optical filter of claim 1 wherein said optical thickness of said second dielectric layer having a non-integer quarter wave optical thickness is selected to enhance transmission of a predetermined wavelength.
- 9. The optical filter of claim 8 wherein said optical thickness of said second dielectric layer having a non-integer quarter wave optical thickness is selected to maintain a predefined reflectivity for said mirror.
- 10. The optical filter of claim 8 wherein said predetermined wavelength corresponds to a service channel in an optical communications system.
- 11. An optical communication device, comprising: an optical communication path; and
- a plurality of optical filtering elements coupled to said optical communication path, each of said plurality of filtering elements being configured to add/drop a plurality of optical signals, each of which being at a respective one of a plurality of wavelengths, and a service channel.
- 12. An optical communication device in accordance with claim 11, wherein said optical communication path is a continuous optical communication path.
- 13. An optical communication device in accordance with claim 11, wherein each of said plurality of optical filtering elements includes an optical interference filter.
 - 14. An optical communication device, comprising:

an optical communication path, said optical communication path being configured to carry a plurality of optical signals, each at a respective one of a plurality of wavelengths, and a service channel optical signal at a wavelength different than said plurality of wavelengths; and

an optical interference filter coupled to said optical communication path, said optical interference filter being configured to select a grouping of said plurality of optical signals and said service channel optical signal.

- 15. An optical communication device in accordance with claim 14, wherein said plurality of wavelengths are within a range about 1550 nm, and said wavelength of said service channel optical signal being spectrally spaced from said plurality of wavelengths.
- 16. An optical communication device in accordance with claim 15, wherein said wavelength of said service channel is substantially equal to 131 nm.
- 17. An optical communication device in accordance with claim 15, wherein said wavelength of said service channel is within a range of and including 1625 nm to 1650 nm.

5

10